Complications - Coronary

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TCT-124

Distal Embolization of Hydrophilic Coating Material from Coronary Guide Wires after Percutaneous Coronary Interventions

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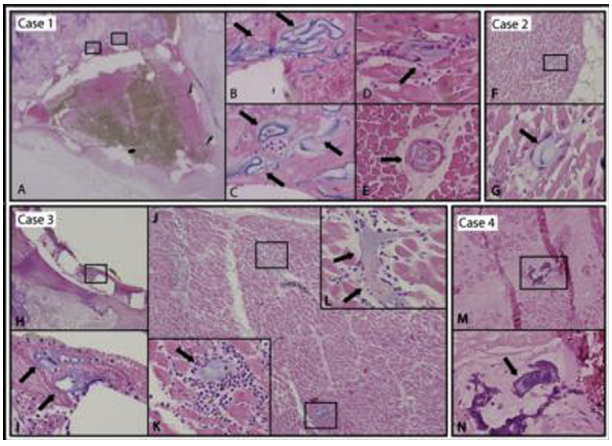
Background: Coronary guide wires are indispensable during percutaneous coronary interventions (PCI). Nowadays, most have hydrophilic coatings to improve their performance. Recent reports however have raised concerns about detachment and embolization of these coatings.
Methods: We have retrospectively reviewed histological myocardial samples, obtained during autopsies (period 2009- 2013), from all patients with a history of PCI (n=40). Furthermore, we have reviewed 205 thrombus specimen, obtained with thrombus aspiration during primary PCI (period 2005-2009). Finally, we have examined the histopathological appearance of hydrophilic coatings 'ex-vivo' by embedding this coating in placenta specimen and cut and stain it in exactly the same manner as the myocardium and thrombus specimen.
Results: Foreign material was observed in the distal myocardium in 4 patients (10%) with a history of PCI (see figure). Furthermore, from the 205 reviewed thrombus specimen, foreign material was observed within the thrombus in 45% of the cases. Finally, the histopathological appearance of the hydrophilic coating 'ex-vivo' was identical to the foreign material found 'in-vivo'.



Conclusions: We observed distal embolization of hydrophilic coating material in 10% of the patients with a history of PCI and detachment from the guide wire during 45% of the thrombus aspirations. These findings suggest that detachment and distal embolization of hydrophilic coating material from coronary guide wires occurs more often than the sparse literature on this topic suggests.

TCT-125

Stent Loss Associated With Use Of The GuideLiner Catheter In Percutaneous Coronary Interventions

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Background: In patients with complex coronary anatomy such as chronic total occlusion or tortuous vessels, stent delivery can be challenging and result in procedural failure. The GuideLiner catheter is a coaxial guide extension system designed to enhance deep vessel engagement and device delivery for difficult coronary interventions. This study was designed to investigate the incidence of stent loss and other complications associated with use of the GuideLiner "mother-and-child" catheter system during percutaneous coronary intervention (PCI).
Methods: This single center, retrospective review was conducted using our institution's percutaneous coronary intervention database involving consecutive cases between February 2010 and July 2011. Data was extracted from cases in which the GuideLiner system was utilized to facilitate device delivery. Procedural reports and cine angiography were reviewed.
Results: A series of 104 eligible cases using the GuideLiner system during PCI were identified. The mean preprocedural stenosis of culprit lesions based on visual angiographic estimation was 84.8% (± 12.3). Procedural success resulting in stent placement with the GuideLiner catheter was achieved in 72.1% of cases (75/104). The incidence of stent loss associated with GuideLiner use was found to be 5.8% (6/104). Vessel dissection attributed to GuideLiner intubation of target vessels occurred in 12.5% of cases (13/104).
Conclusions: To date, this is the largest single review of cases involving the GuideLiner catheter extension system during PCI. Our results further validate the utility of the GuideLiner system in the setting of high lesion complexity and vessel tortuosity. Complications of device application included stent disruption and loss, vessel dissection, and ventricular arrhythmia.

TCT-126

Thrombin Clot Injection for the Treatment of Coronary Wire Perforation

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Background: Coronary perforation (CP) is a rare but potentially fatal complication of percutaneous coronary intervention (PCI). Coronary wire perforation (WP) has been the most frequent cause of CP in the current era. Most of WPs can be treated with endovascular means. The embolization therapy is needed when the conservative approach such as prolonged balloon inflation fails. We have much experience of thrombin clot injection (TCI) for the treatment of WP.
Methods: From June 2007 to September 2013, CPs were identified in 73 (1.44%) of 5077 consecutive PCIs at our institution. WP was the most common cause of CP occurring in 53 of 73 cases (72.6%). 25 of 53 WPs (47.2%) were treated using transmicrocatheter injection of "thrombin clot" made by mixing thrombin solution and autologous blood.
Results: As treatment for WP, reversal of anticoagulation (n=38; 71.7%), negative pressure in the microcatheter (n=5; 9.4%), prolonged balloon inflation (n=12; 22.6%), TCI (n=25; 47.2%) and microcoil embolization (n=4; 7.5%) were used in different combinations. 6 WPs were treated with only observation (11.3%). In hospital death was caused by acute myocardial infarction in one patient of the observation group. Cardiac tamponade occurred in three patients and two of these had a delayed presentation. In the all cases treated with TCI, we successfully stopped bleeding without requiring further procedures and cardiac tamponade. We failed to stop bleeding in one of four cases treated with microcoils and the bleeding could be finally stopped by TCI. Clinical outcomes of TCI for WP are shown in the table. Hemostasis was achieved more securely and rapidly with TCI than with the other means. However, serious thrombosis leading to myocardial infarction occurred in two patients with TCI.

	Thrombin clot injection	Other means	P-value
Number of patient	25	28	
Age	73.4 ± 10.9	72 ± 7.6	NS
CTO	10 (40%)	13 (46.4%)	NS
Ellis II	9 (36%)	3 (10.7%)	<0.05
Use of protamine	18 (72%)	26 (92.9%)	0.067
Success of hemostasis	25 (100%)	15 (53.6%)	<0.001
Duration of procedure (min ±SD)	15.3 ± 14.4	49.5 ± 37.6	<0.001
Delayed tamponade	0 (0%)	2 (8.7%)	NS
Procedure-related MI	3 (12%)	0 (0%)	0.098
Thrombosis	2 (8%)	0 (0%)	NS

Conclusions: TCI for WP is simple, inexpensive, readily available and effective but it may increase the risk of thrombosis.

TCT-127

Incidence, Predictors, and Prognostic Impact of Post-Discharge Bleeding After Percutaneous Coronary Intervention

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